IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) A temperature probe for measuring the internal temperature of a mass of packed tobacco product, said temperature probe comprising:

an elongated tubular shaft having a hollow interior;

an insulating structure mounted on said elongated shaft;

a heat conducting structure coupled to said insulating structure;

a thermocouple coupled to said heat conducting structure and extending into the hollow interior of said elongated shaft;

a control device electrically communicated to said thermocouple and operable to determine a temperature from said thermocouple; and

a lifting mechanism coupled to the elongated tubular shaft and the control device that moves the heat conducting structure and the elongated tubular shaft between a raised position and a lowered position,

wherein when said heat conducting structure is disposed within a mass of packed product said heat conducting structure transmits thermal energy from the mass to said thermocouple and said insulating structure thermally isolates said heat conducting structure from said tubular shaft.

2. (Previously presented) The temperature probe according to claim 1, wherein the heat conducting structure is constructed of metallic material.

3. (Original) The temperature probe according to claim 2, wherein metallic material of said heat conducting structure is a selected from a group comprising a brass, a platinum and a gold.

4. (Original) The temperature probe according to claim 1, wherein said shaft is constructed of a metallic material.

5. (Original) The temperature probe according to claim 4, wherein said metallic material of said shaft is selected from a group comprising a stainless steel and a mild steel.

6. (Original) The temperature probe according to claim 1, further comprising support structure mounted within the hollow interior of said tubular shaft that supports a portion of said thermocouple within said interior.

7. (Original) The temperature probe according to claim 6, wherein said support structure includes a plurality of cotton fibers.

8. (Original) The temperature probe according to claim 1, wherein said tubular shaft has a circular transverse cross-section.

9. (Original) The temperature probe according to claim 1, wherein said insulating structure is mounted on an end of said tubular shaft.

10. (Original) The temperature probe according to claim 1, wherein said insulating structure is pervious to radiant heat energy.

11. (Original) The temperature probe according to claim 1, wherein said insulating structure is constructed of a plastic material.

12. (Original) The temperature probe according to claim 11, wherein said plastic material is thermally stable.

13. (Original) The temperature probe according to claim 11, wherein said plastic material is a polycarbonate.

14. (Previously presented) The temperature probe according to claim 11, wherein said plastic material is high impact polycarbonate.

15. (Original) The temperature probe according to claim 1, wherein said heat conducting structure forms a pointed tip on a free end of said probe designed to penetrate a tobacco product mass when said probe is inserted therein.

16. (Original) The temperature probe according to claim 15, wherein said heat conducting structure has a conical tip on the end of said probe.

17. (Original) The temperature probe according to claim 1, wherein said heat conducting structure acts as a thermal choke.

18. (Original) The temperature probe according to claim 17, wherein said thermocouple is coupled to said heat conducting structure substantially in a region of maximum heating of said thermal choke.

19. (Original) The temperature probe according to claim 1, wherein said thermocouple is a type T thermocouple.

20. (Original) The temperature probe according to claim 1, wherein said thermocouple is micro fine.

21. (Original) The temperature probe according to claim 1, wherein said thermocouple is silver soldered to said heat conducting structure.

22. (Original) The temperature probe according to claim 1, wherein said control device is a programmable logic control device.

23. (Cancelled)

24. (Previously presented) The temperature probe according to claim 1, further comprising a temperature control assembly disposed adjacent the heat conducting structure and connected to the control device to selectively change a temperature of the heat conducting structure when in the raised position.

25. (Previously presented) A method of determining an internal temperature of a packed mass product, comprising:

providing a mass of product;

providing a temperature probe comprising an elongated tubular shaft having a hollow interior, an insulating structure mounted on the elongated shaft, a heat conducting structure coupled to the insulating structure, a thermocouple coupled to the heat conducting structure and extending into the hollow interior of the elongated shaft, and a control device connected to the thermocouple and operable to determine a temperature from the thermocouple;

determining the temperature of the heat conducting structure;

comparing the temperature of the heat conducting structure to a pre-determined temperature range to determine if the temperature of the heat conducting structure is within the predetermined range;

changing the temperature of the heat conducting structure if the temperature of the heat conducting structure is outside of the predetermined temperature range so that the temperature of the heat conducting structure is within the predetermined temperature range;

inserting the probe into the mass so that the heat conducting structure is disposed in thermal communication with the product on the interior of the mass; and

determining the internal temperature of the mass based on information from the probe.

26. (Previously presented) The method according to claim 25, wherein a metallic material of said heat conducting structure is selected from group consisting of a brass, a platinum and a gold.

27. (Original) The method according to claim 25, further comprising maintaining the heat conducting structure in the mass for a period of time of from about 20 seconds to about 90 seconds.

28. (Original) The method according to claim 25, further comprising maintaining the heat conducting structure in the mass for a period of less than two minutes.

29. (Original) The method according to claim 25, further comprising thermally isolating the heat conducting structure from the tubular shaft.

30. (Previously presented) A temperature probe assembly mounted for insertion into a product mass for measuring an internal temperature of the mass, comprising:

an insulated shaft;

a heat conducting structure mounted on an end of the insulated shaft;

a temperature controller coupled to the heat conducting structure that maintains the heat conducting structure within a desired temperature range prior to insertion of the shaft into the mass;

a temperature sensor coupled to the heat conducting structure that measures the internal temperature of the mass when the probe assembly is inserted into the mass; and

a lifting mechanism coupled to the insulated shaft and the temperature controller that moves the heat conducting structure and the insulated shaft between a raised position and a lowered position.